

Customer Based Design & Product Specifications

Lecture #3
January 24, 2006

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University of Minnesota

Information

- Background
- Mission Statement Feedback
- Prototype Lab, ME 1134
 - Blue lockers and roll-about cages (BYOL)
 - See Wei (cell #612-205-7772)
- Student Shop for serious construction

Mission Statements (See pg. 47)

- Brief (one sentence) description of the product.
- Key business goals (time, cost, quality).
- Target markets for the product.
- Assumptions and constraints that guide the development effort.
- Stakeholders.

Progress Report (5 minutes)

Additional Questions:

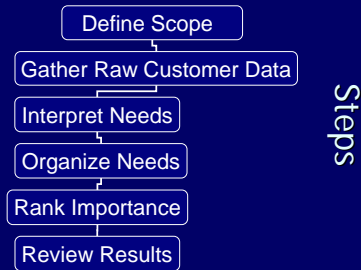
1. Add Project ID# to sheet.
2. List all of your team members and your advisor's name.
3. What is the primary goal of your project?

Example Progress Report (overhead)

Lecture

- Identifying Customer Needs
 - Chapter 4, pg. 53-68.
- Product Specifications
 - Chapter 5, pg. 71-94

Process for Defining Customer Needs



Define Scope

- Mission Statement...
 - Keep asking yourself, "What is the point?"
 - If you have any feedback revise your Mission Statements. Resubmit hardcopy and electronic copy by Weds., 01/25/06 noon.

Defining Customer Needs

- Who is your customer?
 - Clearly define demographic.
 - Lead Users
 - End User
 - Purchaser
 - Original Equipment Manufacturer (OEM)
 - Sales
 - Service
 - Put yourself in their place.

"A professional carefully discovers what is needed and wanted. An amateur assumes what others need and want."

Gary Jackson
President
Blackwater

Gather Raw Customer Data

- Interviews
 - Coke vs. Pepsi Challenge
 - Survey's
- Focus Panels
 - 3M Tartan Park Facility
 - Free 'stuff'
- Observe similar products in use.
 - Grass Trimmer
 - Think outside the paradigm....Hormel Example

Guidelines for Customer Interviews

- Interview 10 - 50 customers
- Prepare a script (But don't be afraid to wander from it)
 - Walk us through a typical use session.
 - What do you like about existing products?
 - What do you dislike about existing products?
 - What factors do you consider when choosing a product?
 - What improvements would you make on a product?
- Use visual stimuli & props
- Surprises? Latent needs?
- Note nonverbal information
- Follow up with Thank-You notes

Class Exercise #1

- Put yourself in the role of a customer of your team project.
- Generate a list of needs as stated by the customer. (Feel free to talk freely among your team members.)
- Write them on one sheet of paper.
- Add names of all team members present at this lecture.
- Turn in at end of lecture.

Interpreting Customer Statements

- *What not how*
- Make need specific
- Positive not negative
 - What can I do about it?
- Attributes of the product

Example Interpretation of a Customer Statement: *What not How*

Customer Statement:

"You'll want to provide a groove to prevent over-bending the optic fiber."

Interpretation:

The manifold protects the optic fibers from over-bending.

(See Ulrich & Eppinger Chap. 4, pg. 63, Exhibit 4-7 for examples of each type of interpretation)

Organize Needs

- Write each interpreted need on a separate card or Post-It Note
- Eliminate identical statements
- Group by similarity
- Choose label
- Choose main needs and sub-needs

Example:

The manifold protects the optic fibers.

- The manifold protects the optic fibers from over-bending.
- The manifold protects the optic fibers from crushing.
- The manifold is light-tight.

■ Thomas R. Chase / trchase@me.umn.edu / Jan 20, 2006

Rank Importance of Needs

- Use 1 (least) to 5 (most) Scale
 - Team members (low cost)
 - Customers (accurate)

Review of Customer Needs

- Important customers identified?
- Vision beyond existing products?
- Follow-up questions?
- All stakeholders involved?
- What did we learn? Any surprises?

Converting Needs to Specifications

Subjective — *Metric & Value* (use units)

Metric = Measurable

Customer Need:

"Grass trimmer is lightweight."

Design Specification:

"Total weight lbs < 3"

01/26/06 Lecture Concept Generation

- Rewrite Mission Statements

Paper copy to Pat Meyer
Electronic to Wei and to
guio0001@umn.edu

- Read Ulrich and Eppinger Text,
Chapter 6, pg. 98-120